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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,348

02/06/2006

Tatsuhisa Yokoi

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EXAMINER

TRAN, DIEM T

ART UNIT

PAPER NUMBER

3748

MAIL DATE

DELIVERY MODE

03/02/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/567,348	YOKOI ET AL.	
	Examiner	Art Unit	
	Diem Tran	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 5-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2 and 14-16 is/are allowed.
- 6) ☒ Claim(s) 1,6-9 and 11 is/are rejected.
- 7) ☒ Claim(s) 5,10,12 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/6/06, 3/2/09</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

The preliminary amendment filed on 2/6/06 has been entered. Claims 3, 4 have been canceled and claims 14-16 have been added. Overall, claims 1, 2, 5-16 are pending in this application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 6-9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imai et al. (US patent 6,952,918) in view of Enga (US Patent 4,509,327).

Regarding claims 1, 8, 9, Imai discloses a regeneration controller for eliminating particulate matter accumulated in an exhaust purification apparatus in an exhaust system of an internal combustion engine, wherein the exhaust apparatus includes catalyst, the regeneration controller comprising:

a heating section for heating the exhaust purification apparatus and eliminating the particulate matter accumulated in the exhaust purification apparatus when an estimated accumulation amount is greater than a reference accumulation amount, the heating section obtaining the estimated accumulation amount by estimating the amount of particulate matter accumulated in the exhaust purification apparatus (see col. 6, lines 20-64); a temperature detector (53) for detecting temperature of the exhaust purification apparatus; a control section for performing burn-up heating of the exhaust purification apparatus for burning the particulate

matter accumulated in the exhaust purification apparatus, and for continuously lowering the air-fuel ratio of the exhaust to perform normal heating of the exhaust purification apparatus (see Figure 4), wherein the control section performs burn-up heating when the estimated accumulation amount is less than a burn-up start determination value and performs normal heating when the estimated accumulation amount is greater than the reference accumulation amount and the burn-up start determination value (see col. 10, lines 14-30); and a prohibition section for prohibiting burn-up heating when the temperature detected by the temperature detector decreases to a catalyst inactivation level (see col. 6, lines 20-31); however, fails to disclose that said burn-up heating including repeatedly changing the air-fuel ratio of the exhaust between a rich state and a lean state to perform burn-up heating of the exhaust purification apparatus. Enga teaches changing the air-fuel ratio of the exhaust between a rich state and a lean state to perform burn-up heating of a particulate filter for burning the particulate matter accumulated in the exhaust gas (see col. 6, lines 48-64).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teaching of Enga in the Imai system, since the use thereof would have provided an effective means to increase an exhaust gas temperature for regenerating the filter.

Regarding claim 6, Imai further discloses that the exhaust purification apparatus includes a first exhaust purification mechanism arranged in the exhaust system and a second exhaust purification apparatus arranged downstream from the first exhaust purification apparatus; and the temperature detector (53) detects as the temperature of the exhaust purification apparatus between the first and second exhaust purification mechanisms (see Figure 1).

Regarding claims 7, 11, Imai further discloses that temperature detector (54) detects as the temperature of the exhaust purification apparatus the exhaust temperature at a downstream side of the exhaust purification apparatus (see Figure 1).

Allowable Subject Matter

Claims 5, 10, 12, 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 2, 14-16 are allowed.

Conclusion

Any inquiry concerning this communication from the examiner should be directed to Examiner Diem Tran whose telephone number is (571) 272-4866. The examiner can normally be reached on Monday -Friday from 8:30 a.m.- 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (571) 272-4859. The fax number for this - group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 800-786-9199 (toll-free).

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Art Unit: 3748

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/Diem Tran/
Patent Examiner

/Thomas E. Denion/
Supervisory Patent Examiner, Art Unit 3748